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COVID-19’s Proving to Be a Moving Target But Infection Preventionists Can Get a Bead

The reports from the frontlines of any war lay the foundation upon which history will be written, and we here at *Infection Control Today*® strive to pour a strong foundation. We offer drafts of the history of coronavirus disease 2019 (COVID-19) that we hope get it right.

For instance, in our cover story on page 18, Saskia v. Popescu, PhD, MPH, MA, CIC, takes a look at how crucial contact tracing has become during the COVID-19 crisis. Popescu, a member of our Editorial Advisory Board, points out that contact tracing, when done right (South Korea is an example), can be an effective method for stymying the spread of SARS-CoV-2. COVID-19 has forced a reexamination of healthcare’s method of operations on many levels. Rebecca Leach, RN, BSN, MPH, CIC, on page 20 looks at how that reexamination extends to standard precautions.

Charles P. Gerba, PhD, is a professor of environmental microbiology at the University of Arizona. On page 28, he looks at how continuously active sanitizers or disinfectants (CADs) on surfaces could help mitigate infection transmission.

COVID-19 has been such a cataclysmic event that it might be easy to overlook the myriad of other healthcare-acquired infections (HAIs). As author Jan Dyer reports on page 25, they’re still out there and causing harm.

Perhaps nowhere is infection control and prevention so crucial than in neonatal intensive care units (NICUs). *ICT*® on page 22 features a Q&A with Jenny Hayes, MSN, RN, CIC, CAIP, CASSPT, the infection prevention leader at the Hospital of the University of Pennsylvania. She talks about the unique challenges of infection prevention in NICUs during this pandemic.

Unique challenges everywhere you look, challenges that readers of *ICT* can’t conveniently overlook to go about their business. This is their business. Please contact Editorial Director Alexandra Ward at award@mjhlifesciences.com with any questions, or for opportunities to contribute.

Thank you for reading,

Mike Hennessy, Sr
Chairman and Founder

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Coronavirus disease 2019 (COVID-19) has made hand hygiene all the rage. That's too bad. Because hand hygiene doesn't only help to slow the spread of COVID-19, but a slew of other dirty bugs, as well. Me, for instance. I am a bacteria that causes diarrhea, and we're not just talking a little bit of discomfort, either. If you have me, then you can have diarrhea up to 10 times a day. If you're 65 or older and taking antibiotics, then you'd better watch out. You're especially vulnerable. I infect about 500,000 people in the United States each year. If you're diagnosed with me, within a month 1 of 11 of you will be dead. And some of the survivors might wish they were dead. On top of diarrhea, I can cause fever, stomach tenderness, severe cramping, nausea, loss of appetite, dehydration, and rapid heart rate. All of the above.

I love hospitals or nursing homes. I really thrive there. The healthcare workers are more likely to come into contact with me and that gives me access to vulnerable patients and/or residents. I can also infect you if you touch clothes, sheets, or other surfaces that have been in contact with feces.

I'm difficult to shake off. About 1 in 6 people that I'll infect I'll be able to infect again within 2 to 8 weeks. I'm not only confined to hospitals, though. If you have a weakened immune system for any reason, I could be coming after you, as well.

Yes, good hand hygiene can keep me at bay, but not everybody practices good hand hygiene, not even in healthcare settings. Doctors, nurses, infection preventionists—they all need to wash their hands and wash their hands often. COVID-19 underscores that, but let’s see what happens when COVID-19 goes away.

One of the ways I work my mischief is through something else that's a huge issue in healthcare: antibiotics. I'm one of the reasons why hospitals have antimicrobial stewardship programs. You're 7 to 10 times more likely to get me if you're taking antibiotics or the month after you've stopped taking antibiotics. Here's another interesting tidbit: I'm starting to infect an increasing number of younger people who aren't taking antibiotics or are in the hospital.

I'm everywhere in the environment: air, water, soil. I'm in the feces of humans and animals. Many people have the bacteria in their intestines and never have any symptoms. But I'll find someone to infect. I'm patient.

I'm a spore, and inactive but thanks to a protective coating, I can live for months or even years on surfaces. I spring back to life if somehow I reach somebody's intestines. Again, though, if you're healthy I can't really do much damage. In fact, I live in a lot of intestines and the carriers never exhibit any symptoms. Of course, not everybody's healthy, are they? So, I'll just wait. Eventually, I'll find a host.

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How Lysol Got EPA’s Approval to Fight COVID-19

BY FRANK DIAMOND

A study in the American Journal of Infection Control (AJIC) generated a lot of attention recently when it said, in effect, that certain Lysol products are effective against coronavirus disease 2019 (COVID-19) and the Environmental Protection Agency quickly agreed. The EPA approved Lysol Disinfectant Spray (EPA Reg No. 777-99) and Lysol Disinfectant Max Cover Mist (EPA Reg No. 777-127) to combat SARS-CoV-2, the virus that causes COVID-19, based on the findings of a study published in the form of a letter to the editor in the AJIC.

Multiple sanitizers and disinfectants have made claims of being effective against the coronavirus, but only EPA-approved products can be legally marketed that way. The Lysol products were found to inactivate the pathogen at 2 minutes of use on hard, non-porous surfaces, per EPA testing guidelines. The AJIC peer-reviewed data evaluated the effectiveness of multiple products against SARS-CoV-2 and reported 99.9% efficacy for Lysol in particular.

Julie McKinney, PhD, global director of microbiology and virology at Reckitt Benckiser, the company that makes the Lysol products, told Infection Control Today® that the study might have ramifications beyond the healthcare environment.

“Everybody is going to have to increase their level of cleaning and disinfection and sanitation if they’re going to have consumers come into their spaces,” said McKinney, who leads a team comprising microbiologists, chemists, and consumer scientists. “We’ve gotten a lot of requests from industry to be able to help them understand how to best use the products in their environment.” (You can find the video of ICT®’s interview with McKinney at InfectionControlToday.Com.)

The EPA’s approval includes restrictions on how the Lysol products can be used.

“They cannot be used on devices; something like a stretcher, or any other type of instrument that might be used to work on a patient,” McKinney said. “So we would always recommend that you use according to the label instructions. You clean the area in advance, and then depending on if you’re going to disinfect or you’re going to sanitize, you would simply spray for a period of time, about six to eight inches away from the area that you’re trying to disinfect or sanitize. If you’re going to disinfect, you’re going to let it sit for 3 minutes and then you’re going to wipe it. If you’re going to sanitize, you only have to leave it for 30 seconds and then wipe.”

The study stated that the following microbicidal actives are effective against SARS-CoV-2: ethyl alcohol, para-chloro-meta-xyleneol, salicylic acid, and quaternary ammonium compounds. They can kill 99.9% of coronaviruses. They are all ingredients in the Lysol products, but can also be found in other products and, of course, can be assembled by anyone. “We’re not saying you have to use our product,” McKinney said. “Obviously, we would like you to use our product. But these actives would provide efficacy against this virus.”

She and her co-investigators wanted that known ASAP.

“We went in as a letter to the editor because we wanted the information to get out there quickly,” McKinney said. “We could have just broadcasted it through commercial or consumer outlets, but we really felt like it was important to put it into a peer-review space in order to increase the credibility of it.”

Surface disinfection has been a key focus for investigators during the pandemic, as it wasn’t initially clear just how long SARS-CoV-2 could live on various surfaces. The US Centers for Disease Control and Prevention (CDC) explains that “it may be possible that a person can get COVID-19 by touching a surface or object that has the virus on it and then touching their own mouth, nose, or possibly their eyes. This is not thought to be the main way the virus spreads, but we are still learning more about how this virus spreads.”

The CDC recommends thorough disinfection using EPA-registered disinfectants on the agency’s List N. William A. Rutala, PhD, MPH, CIC, and David J. Weber, MD, MPH, wrote in an article for ICT® that the “transmission of viral respiratory pathogens such as COVID-19 can be minimized by thorough and complete application of an EPA-registered disinfectant per the manufacturer’s instructions, that is included on EPA’s List N, to surfaces as
well as good personal hygiene, including hand hygiene, minimize contact with your face, and respiratory hygiene/cough etiquette.”

McKinney agrees, calling Lysol sprays "one tool in the toolbox." There are other factors in play like good hygiene and isolating somebody who has an illness.

“We’re targeting high-touch surface areas, and those do tend to be hard surfaces,” McKinney said. “You’re talking about something like the doorknob, the light switch, areas around the bathroom, and anywhere around the sink.”

Conducting such a study under pandemic conditions presented unique challenges, McKinney said. “We found out about the virus,” said McKinney. “It wasn’t available for testing yet. So, we had to access that virus for testing, then we had to get our products together to be able to ship for testing. We had to be able to do protocols and things like that. And we’re working in a very restricted environment. We’re individuals in the laboratory. We can’t have people in the laboratory at max capacity, but you’d really like to be operating in a max capacity situation because this was so urgent. We were going to submit the information to the EPA, and everything had to be done at a very high standard. It was quite an undertaking for the team.”

And there are more studies in the offing.

“We are currently creating guidance for industry to use but that guidance isn’t public yet,” McKinney said. “And so that’s not something that we can share at this time. But we are currently compiling our data to make a recommendation.”

REFERENCES AVAILABLE AT INFECTIONCONTROLTODAY.COM

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**All Healthcare Workers Dealing with COVID Patients Need N95s**

**BY FRANK DIAMOND**

Infection preventionists and other healthcare workers caring for patients in a healthcare setting who have, or may have, coronavirus disease 2019 (COVID-19), should be equipped with N95 respirators and not just surgical or medical masks, argues a recent opinion piece in the *Annals of Internal Medicine*. N95s and medical or surgical masks have been shown to offer equal protection in some recent studies, and that’s the point being disputed by investigators with the Marshall B. Ketchum University College of Pharmacy, Fullerton, Calif., and the Providence-St. Jude Medical Center, Fullerton, Calif.

“We believe that a thoughtful evaluation of past and existing data in the setting of the COVID-19 pandemic strongly supports the use of N95 respirators for all inpatient care of patients with COVID19, not only during AGPs [aerosol-generating procedures],” the authors wrote. They took aim at the notion that in many cases surgical or medical masks can offer healthcare workers enough protection against SARS-CoV-2. “A COVID-19 inpatient unit with multiple patients coughing and breathing will have far higher exposure to droplets, resuspended droplets, and aerosols than an outpatient setting.”

The meta-analyses that the investigators cite mix outpatient and inpatient data, they say, and therefore underestimate the benefit of N95s, as opposed to surgical masks. “It poses a danger to HCWs [healthcare workers] for inpatient COVID-19 guidelines to rely on meta-analysis of randomized controlled trials that mix different methods, settings, and outcomes,” the authors state. “On the basis of recent data, aerosol transmission is possible.”

The investigators appeal directly to healthcare administrators who have been struggling with inadequate supplies of N95s and other PPE during the COVID-19 pandemic.

The investigators want guidelines for use of N95s to be re-evaluated.

“It is apparent that the risk for HCW infection is related to duration and magnitude of exposure,” the investigators state. “A COVID-19 inpatient unit with multiple patients coughing and breathing will have far higher exposure to droplets, resuspended droplets, and aerosols than an outpatient setting. The data the guidelines referenced do not support the conclusion that medical masks are equivalent to N95 respirators in reducing risk for infection.”

*Infection Control Today®* interviewed...
one of the study’s authors, Harry Peled, MD, the director of cardiology and critical care at St. Jude Medical Center, Fullerton, Calif. “I think for administrators and infection control people, the attitude has to be there is enough evidence that the wearing of N95s should be official,” Peled told ICT®. “The claim that we’re going to wait for perfect evidence is just not tenable. We don’t do that for anything else in medicine.”

Peled and co-authors directly appeal to healthcare administrators who have been struggling with inadequate supplies of N95s and other personal protective equipment (PPE) during the COVID-19 pandemic. The investigators are concerned that studies suggesting protective equivalency between the two types of masks might tamper administrators’ efforts to ensure enough N95s for healthcare workers working with COVID patients in inpatient settings.

“Because various organizations have claimed that medical masks are acceptable, health system administrators may believe that they have a valid reason to deny N95 respirators to HCWs on COVID-19 units and reserve them for AGPs [aerosol-generating procedures] even when other guidelines do recommend their use,” the investigators write.

Yes, there are shortages of N95s, but “instead of allowing our HCWs to work in substandard protection, countries should focus on allocating resources to increase production of … N95 respirators.”

In the end, say the investigators, N95s are more cost-effective. “Use of N95 respirators to protect HCWs should not merely be a preference or a recommendation based on availability,” the study states. “The data indicate that it should be the standard for all inpatient COVID-19 management.”

In the Q&A at right, Peled puts an exclamation point on that point. He concludes that “everything is imitation right now. Nothing we do is going to be perfect. I think people have to remember that we’re mitigating risk, not eliminating risk.”

REFERENCES AVAILABLE AT INFECTIONCONTROLTODAY.COM

Q&A | There’s No Substitute for an N95

When the opinion piece written by Harry Peled, MD, and co-authors ran in the Annals of Internal Medicine back in June, it kicked up quite a stir, some of it among healthcare workers who have to deal with patients with coronavirus disease 2019 (COVID-19). Peled wrote that healthcare workers who work in hospitals in which inpatient patients have, or might have, COVID-19, need to be equipped with N95 respirators—surgical or medical masks just won’t do. Infection Control Today® reported on the opinion piece on June 30 and conducted a Q&A with Peled, a portion of which appears below, on July 13. As of this writing, they are still among the most viewed articles on our website. It’s safe to say that Peled struck a nerve. The entire interview can be found at InfectionControlToday.com.

Infection Control Today®: What made you decide to write the opinion piece in the Annals of Internal Medicine in the first place?

Harry Peled, MD: Great question. There’s a lot of angst about this issue and there was really a lot of moral distress and a lot of disunity going on. You had healthcare workers who said, “I clearly need to have an N95.” You had administration and supply chain people in good faith saying, “You know what? That’s not guideline-based. I have to save these masks for the aerosol generating procedure. So, you can’t really have these in N95s.” And in the midst of a COVID-19 crisis, you had a really horrible clash between the workers and the administration. Everybody was trying to do the right thing, but it was certainly a very poisoned atmosphere. And whenever people quote the guidelines, I think one of the most important things is to go to what is behind the guidelines, right? At the end of the day, guideline writers like all of us try to do the best thing. There are a bunch of people sitting in a room trying to put this together. Especially in a setting where everything was done pretty quickly. So, I took the time to look at the articles which were supporting that the [surgical and medical] face mask is equivalent, and I found that the evidence was just simply not there to say that they are equivalent.

Infection Control Today®: What I read in your article is that you think that healthcare workers in a hospital that is treating COVID-19 patients should be wearing N95 respirators.

Peled: That is correct. I think anybody who is on an inpatient side and you’re taking direct care of COVID patients, you should be having an N95.

Infection Control Today®: And when you talk about the guidelines, you’re talking about guidelines from the US Centers for Disease Control and Prevention?

Peled: So, it’s interesting. There are differences amongst the guidelines. The CDC guidelines, say that N95 is preferred, but then they say [surgical and medical masks are] acceptable if there is a shortage. And I think the problem there is you are conflating two different issues. If it is preferred based on the science,
it is preferred. Now, if there are not enough and you have to ration them, then one has to admit that you are rationing something useful. I think the CDC guidelines are a bit problematic when they say the N95 is preferred, but it is acceptable to use [surgical or medical masks] when there is insufficient supply. I think that’s where the problem is on the CDC guidelines. When you look at the Surviving Sepsis Campaign guidelines, they actually explicitly say that face masks are preferred to N95s based on the evidence that I think in particular, is not at all supported by a careful look at the evidence.

ICT*: Do you think the guidelines will be adjusted in light of what you wrote or what others are writing or just the idea of having healthcare workers be as safe as possible?

Peled: That is my sincere hope. One of my goals when I was writing this was very specifically for the guidelines to be changed. There is a difference between saying I’ve proven the N95s are superior versus saying I’ve unequivocally shown equivalency between N95s and face masks. And I think it is simply based on the evidence. One cannot say that equivalency has been shown. You know, one study is done on outpatients, so that’s not a reasonable extrapolation. You look at the Loeb study and that study, the people wore the N95 only when they walked into the room. They’re just an extrapolation without evidence behind it. So, you have those two studies, which are a bit more towards the negative side. When you look at the two randomized control trials by Machtye done in China, those actually showed a benefit when you look at clinical respiratory illness. So very much the hope is that the guidelines will be changed. They’re continuously updated. You know, people do the best they can.

ICT*: Again, I’m paraphrasing, and tell me if I’m wrong here, but I think you made the point that this allowing surgical masks and medical masks to be used in circumstances where N95s should be used detracts from the effort to supply enough N95s.

Peled: I think you hit the nail on the head. And that is a fundamental problem. As long as the guideline writers and society say that they are leveling, you’re not going to have the focused effort to make the N95s. I think once that we as a society admit that there is reasonable evidence to show that N95s are better, my hope is that we will produce them. One has to remember that before this all started, the cost of an N95 mask was about $1. And 3M has made a point of saying that they’ve actually not jacked the prices up. You might not be able to get a 3M N95, but they have not jacked the prices up. Remember, it’s a piece of plastic and it’s made from oil and a crude barrel of oil is relatively cheap. So, I think exactly as you said it, that if we admit that there is reasonable evidence that N95s are better than face masks for impatient care, instead of us fighting over the supply, we will increase it.

ICT*: Any advice for infection preventionists, EVS teams, hospital administrators, procurement teams as far as masks are concerned?

Peled: I think it’s a very tough position for them to be in. And in my article, I actually commented on that, because I think the term moral distress can often be thrown around too loosely. I think these people have serious moral distress. And it doesn’t do society or anybody good for frontline healthcare workers to beat up on these people, right? These people got a supply chain. They have guidelines that say we have to keep them for the aerosol generating procedures, even if the risk is much less. Those are the guidelines. You can’t fault the administrative people for following the guidelines. I think they’re put in a tough spot. But I do think from the administrator point of view, you have to look at the other side. If you look carefully at the evidence, you cannot fairly extrapolate from some of these outpatient studies of 20 patients. I think when healthcare workers uniformly say, “We’re on the frontline, this is what we think we need.” And they have evidence to support that. I think the plan has to be that we will supply N95s for you, understanding that there has been evolution in the guidelines. The other thing I should mention since we started this paper in April—it takes a while before it comes out—is that the American College of Physicians has very specifically endorsed N95s for COVID care defined as being within six feet of the patient. So again, you’ll know guidelines are in flux, and the evidence is in flux. I think for administrators and infection control people, the attitude has to be that we have enough evidence that the wearing of N95s should be official. The claim that we’re going to wait for perfect evidence is just not tenable. We don’t do that for anything else in medicine.”

“ICT**: “I think for administrators and infection control people, the attitude has to be there is enough evidence that the wearing of N95s should be official. The claim that we’re going to wait for perfect evidence is just not tenable. We don’t do that for anything else in medicine.”

COVID care defined as being within six feet of the patient. So again, you’ll know guidelines are in flux, and the evidence is in flux. I think for administrators and infection control people, the attitude has to be there is enough evidence that the wearing of N95s should be official. The claim that we’re going to wait for perfect evidence is just not tenable. We don’t do that for anything else in medicine, and goal has to be how are we going to get N95s in sufficient quantity. Everything is mitigation right now. Nothing we do is going to be perfect. I think people have to remember that we’re mitigating risk, we are not eliminating risk. ☐

This interview has been edited for clarity and length.
That hospitals will have to report their data on coronavirus disease 2019 (COVID-19) to the US Department of Health and Human Services (HHS) spurred a blistering backlash from two of the largest associations representing infection preventionists today.

Connie Steed, MSN, RN, CIC, FAPIC, president of the Association for Professionals in Infection Control and Epidemiology (APIC), said in a statement: “This overnight shift creates a lack of trust in the data at a time when we need that trust more than ever. Changing the data collection requirements and methodology in the middle of the pandemic will impact the quality and timeliness of critical public health data that we rely upon to drive our response and policies in our community. Further, there is concern that those responsible for analysis and interpretation of the data will not have adequate training in epidemiology.”

The Trump administration has decided that the COVID-19 data will no longer be reported to the US Centers for Disease Control and Prevention (CDC) through that agency’s National Healthcare Safety Network (NHSN). Hospitals will be required to report their COVID data to the HHS TeleTrack System, and the White House suggested that the National Guard can be called in to help in that reporting process.

“Now at a time when there are increases in infections of COVID-19 and with only two days’ notice, the system for collecting data is upending the infection reporting process for COVID-19 [in a] shift to an unknown mechanism....”

— Connie Steed and Hilary Babcock

Steed and Babcock write that this places further burden on healthcare employees who are already working long hours battling COVID-19 in their hospitals and communities. They also cited the numerous reporting mandates at the state level.

“Failure to input that data into state systems that use the NHSN would render the data unhelpful for comparison purposes and could impact consumer transparency. It will also deny infection preventionists and epidemiologists the consistent data needed to plan our response for future pandemics.”
Will Lack of Reimbursement End the Rise of Telemedicine?

BY JUAN PABLO SEGURA

COVID-19 forced the healthcare system to break through biases against telemedicine and other virtual solutions. Perhaps more importantly, policy makers opened up the means to reimburse providers for using digital tools, eliminating a barrier that made even forward-thinkers reluctant to adopt virtual care before.

But as these policies are withdrawn in the light of a reopening economy (as of this writing), and in-person visits become a viable option for patients again, leaders in the space are questioning the sustainability of virtual care. Will its proven success through the pandemic be enough to engrain it into the system?

There are many factors that could eliminate the gains for virtual care, but financial concerns are front and center. It argues that without defined codes, practices lack the incentive to implement virtual care into workflows in a sustained and scalable way.

But this is taking a too-narrow perspective on the question. Pre-COVID, digital health solutions were growing exponentially, even without the holy grail of CPT codes or defined reimbursements.

Though reimbursement challenges are certainly a handicap to success, the experience of digital solutions in the marketplace showcases three major ways to neutralize the problems, and scale and sustain a digital transition and program.

Technology implementation requires a substantial investment of time and resources on the front end—new tools, changed workflows, updated protocols, staff training, etc. In a pilot and play situation, there is no motivation to make these systematic changes that are necessary to the success of the solution. In order for a technology solution to affect real change for patients, there needs to be a practice-wide decision to permanently adopt the necessary system changes.

Virtual health companies and champions need to be mindful of this. To make technology use optional, and hope that the use of digital tools and processes continue after a set of extraordinary events occur (e.g., a global pandemic) is implausible. Practices have to change their workflow so that there is no other option—the set-up has to be digital or virtual first.

This is not a reimbursement issue. This is a leadership issue.

The obvious benefit of virtual care is convenience for patients—at the same time, the benefits that virtual care brings to workflow, burnout, and revenue maximization need to be recognized. Virtual care, whether synchronous or asynchronous, can automate routine appointments, allow for more high margin procedures, eliminate physician burnout, and can even allow physicians to work from home—a possibility that may have seemed imprudent if not impossible pre-COVID.

All of these benefits have to be quantified into hard ROI, yet virtual care companies and their adopters are stuck fighting a one-dimensional war around CPT reimbursement. Virtual care may be better a priori than other healthcare encounters, but without a hard cost analysis that shows why it is better operationally, practices will be slow to adopt it. Practice managers need to expand their outlook to see how they can transform their core operations, and not just look at CPT reimbursement.

To drive organizational changes and provider buy-in, virtual care needs to be the main pole in the tent of a practice’s growth strategy. Many health systems have chosen “giving women more options” as a visible, recorded part of their strategy—it isn’t just another button in a drop down menu on a ZocDoc page. If “going virtual” is made the focal point—if it is on the hospital or service line’s yearly board report and leadership has to report on how and why they are using virtual care—the practice team will prioritize it.

The pandemic has sped up the process of digital health adoption, but it didn’t generate it—and after the pandemic is passed, we will continue moving forward into the digital future.

JUAN PABLO SEGURA founded Babyscripts in 2014 with the vision that internet enabled medical devices would transform the delivery of pregnancy care.

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Notable Quotables

“Everybody is going to have to increase their level of cleaning and disinfection and sanitation if they’re going to have consumers come into their spaces.... We’ve gotten a lot of requests from industry to be able to help them understand how to best use the products in their environment.”

—JULIE MCKINNEY, PHD, GLOBAL DIRECTOR OF MICROBIOLOGY AND VIROLOGY RECKITT BENCKISER

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As the COVID-19 pandemic continues to surge, it is unlikely that contact tracing within healthcare will become anything less than critical.

As a study in *Scientific American* notes: “Large-scale contact-tracing programs in places such as South Korea and Germany have been instrumental in suppressing the novel coronavirus, SARS-CoV-2. Within days of detecting its first case on January 20, South Korea created an emergency response committee that quickly developed wide-scale virus testing, followed by an extensive scaling up of the nation’s network of contact tracers.”

In the United States though, we have struggled with contact tracing, with efforts woefully under-resourced. Estimates have put the needs of the United States at 100,000 contact tracers. Sadly though, this has not been the case, with states like Arkansas having 900 contact tracers for the whole state. Florida, which is experiencing a large surge in cases, has 291 tracers per 100,000 residents.1

In the conversations about contact tracing, many may not realize that infection preventionists have been doing this for decades within the walls of healthcare facilities. There is often an assumption that public health departments solely do contact tracing, but when healthcare workers or patients have infections like tuberculosis, pertussis, or varicella, the IP works to identify exposed patients and staff to notify and work with occupational health regarding quarantine or post-exposure prophylaxis. From measles outbreaks to staff working with pertussis, I have done contact tracing as an infection preventionist since the day I began in the profession. Public health efforts tend to come into play when there are community-based exposures beyond the hospitals, or if we need assistance with larger exposures. Joint efforts are often employed for large exposures, such as measles.2

In hospitals, it is common to have infection preventionists manage contact tracing and COVID-19 has been no exception. Especially in the early days of the disease when testing was more challenging to obtain, it was not uncommon to have patients hospitalized for several days without consideration for the disease, especially when we were learning about the range of symptoms.

When a patient is identified as having COVID-19, review of their movement throughout the hospital and the use of isolation precautions comes into play. Infection preventionists review and trace the patient’s movements, when isolation precautions were employed, and work to identify potential points of time when from Ebola to foodborne illnesses, like salmonella. More recently, it’s been used in response to COVID-19 and has been extremely successful in countries that have opted to heavily invest in such efforts from the beginning.

Contact Tracing for COVID-19?
Infection Preventionists Can Get it Done

BY SASKIA V. POPESCU, PHD, MPH, MA, CIC

A novel disease comes with novel problems, and in this new era of coronavirus disease 2019 (COVID-19), there have been so many things challenging infection prevention efforts. From personal protective equipment (PPE) roadblocks to changing isolation precautions, this has been a minefield not only for infection prevention, but also public health. As of this writing, the United States is facing a backlog in testing, delaying results for up to 10 or even 14 days in some areas. Concurrently, there is unabated transmission through many southern states, worrying many that significant second waves are already in play.

As the United States works to increase testing capacity and hospitals adjust to ensure they can handle surges, one of the biggest pieces to COVID-19 response is contact tracing. This function of public health works to reduce the potential for secondary transmission following the identification of a single case. Resource intense, contact tracing is a cornerstone of public health and outbreak response.

Some Background
Contact tracing is not new, but rather a tried-and-true measure of public health response to outbreaks and infectious diseases. When someone tests positive for SARS-CoV-2/COVID-19, contact tracers work to interview the positive person and identify who they may have come into contact with so they can then be informed and quarantine for 14 days if needed. Contact tracing is an approach that has been successfully used for outbreaks ranging
there could have been exposures due to a lack of isolation. This was more common in the beginning and prior to many hospitals moving to mandated universal masking for entire healthcare facilities. Once these points in time are reviewed, identifying staff interacting with the patient during periods without isolation becomes key. Pulling a “line list” of those staff who cared for or interacted with the patient during this timeframe is important as it not only allows for notification, but also coordination with occupational health.

For COVID-19, this means following the Centers for Disease Control and Prevention (CDC) definition of exposure and identifying those staff who interacted with the patient without PPE (mask and eye protection) within six feet and for more than fifteen minutes. From there, it comes down to identifying those staff exposed and ensuring they’re aware of the potential exposure. While the CDC allows healthcare workers to continue working post-exposure as they are essential, they are to quarantine for the 14 days following the exposure. For many though, the critical need for healthcare workers is vital and ensuring they are vigilant in masking following this exposure is vital.

Building Relationships
In the event that a healthcare worker or staff member is found to be positive, the same processes apply. Ultimately, contact tracing is about building relationships and trust to ensure that people feel comfortable discussing potential exposures and feel safe about discussing times they might have been unmasked. Contact tracing occurs within their department/unit and then any patients they interacted with. Since the use of universal masking in healthcare facilities, this has greatly diminished those meeting the definition for exposure.

Unfortunately, one piece we’re seeing more of are exposures during interactions with coworkers in breakrooms, walks to the coffee shop, etc. Too often we focus on the risk from patient interactions, which means we fail to really communicate the risk of interaction with our coworkers without masks on.

Perhaps one of the biggest challenges in contact tracing is pulling these line lists and identifying anyone who interacted with that staff member or patient. Chart review and emailing leaders of departments that might not be documented in the medical record, such as environmental services (EVS), is time intensive. Moreover, as much as we’d like electronic medical records to be able to rapidly pull such data, it’s often imperfect and still requires reaching out to leaders of those other departments.

This presents an opportunity though, for technology to perhaps innovate a new approach to tracking interactions and movements within healthcare. Some suggestions have ranged from using Bluetooth identification badges to log employees going in and out of the patients’ room. This is a challenge I’m hoping the COVID-19 pandemic has brought to light and will spark innovative approaches that can be utilized far beyond the pandemic. While many are focusing on PPE efforts to help drive change and establish more sustainable supply chains, contact tracing is one that also needs re-vamping. The importance of privacy shouldn’t be ignored and hopefully approaches that focus on patient-facing interactions can help support that.

As the COVID-19 pandemic continues to surge, it is unlikely that contact tracing within healthcare will become anything less than critical. While it may be easier with the universal masking efforts, it becomes increasingly difficult as more healthcare workers become positive.

For many of us in surging areas like Arizona or Texas, keeping above the water can be a full-time task. There are ranges of how we approach this as well—do we cease contact tracing in COVID-19 cohorts with the assumption that the proper measures are taken? Allow self-reporting? Ultimately, hospitals pose a unique environment for contact tracing and heavily rely on infection preventionists to perform it. As we move to a sustainable COVID-19 response and potentially living with it in a more endemic nature, what will contact tracing look like?
standard precautions have a long history in healthcare, being practiced in some form since the Middle Ages. The Centers for Disease Control and Prevention (CDC) formalized these precautions into what was then called universal precautions in response to the HIV epidemic in the late 1980s. Universal precautions were focused on protecting healthcare workers from blood borne pathogens, focusing on the use of personal protective equipment (PPE) such as gowns and gloves. The concept treats all blood and body fluids as potentially infectious. Universal precautions were revised and became standard precautions in 1996 and became more inclusive of an overall infection prevention aspect when engaging in patient care. Respiratory hygiene was added to standard precautions in 2007, in recognition of the increasing risk of respiratory spread of illnesses such as pandemic influenza.

Transmission based precautions were developed in the 1970s, and were revised to be a next higher level of precautions for those infectious diseases that were spread through contact, droplet and airborne transmission. The emergence of antimicrobial resistant pathogens drove the need to update standard precautions so that healthcare environments could prevent transmission as well as keep providers safe. Just as the need for transmission-based precautions was driven by emergence of pathogen resistance, it is now time to look again at the concept of standard and transmission-based precautions and determine if additions or changes are needed in the wake of the COVID-19 pandemic.

Respiratory Etiquette
Recent outbreaks and epidemics have shown that infection prevention needs to become more sophisticated with standard precautions, travel history and general awareness of national and international epidemiology and diseases of public health concern. Over the last two decades, the majority of the significant outbreaks was due to viral respiratory illnesses (severe acute respiratory syndrome (SARS), middle eastern respiratory syndrome (MERS), avian influenza). The SARS epidemic in part prompted the CDC to update the standard precautions to include respiratory etiquette.

In these recent outbreaks, and the current pandemic, healthcare workers (HCWs) are at increased risk for acquiring the infections purely as a result of doing their jobs. Data has shown that HCWs made up roughly 20% of cases in the SARS outbreak and 18% in the MERS outbreak. It is still unknown how many HCWs have become infected in the COVID-19 pandemic, but current estimates as of this writing are greater than 65,000 cases. Many factors can contribute to HCW infections, but often early in outbreaks and pandemics, lapses in infection control practices play a major role. Not having the appropriate type or amount of PPE, lack of isolation of infectious patients, and lack of awareness of epidemiological risk factors, such as recent travel or congregate living status, all play a part. With any type of outbreak, there is always an initial gap in awareness and understanding of the pathogen, transmission factors, and virulence. At this time
is when HCWs can be most vulnerable and the outbreak has the potential to grow from a local or regional level. It is during this time when traditional application of standard precautions may not be enough.

Recent articles in the press have been debating the role of airborne transmission in COVID-19 spread. While there is not a clear consensus, what does appear to be clear is the need to develop more nuanced definitions of droplet and airborne transmission. The desire to have a very mutually exclusive and clear separation of the types of transmission makes it easier to educate, implement, and monitor. However, science shows that it is more of a continuum that is impacted by many variables, which leaves much up to the bedside practitioner to evaluate and assess risk levels.

Environmental factors, such as humidity level, air exchanges, pressure differentials, can all impact the amount of aerosolization that can occur with respiratory droplets. Patients themselves impact, with activity levels, cough etiquette and other host factors that can potentially impact communicability of the virus. The strain of the virus can be more infectious than others, which is not known at the time of admission to the healthcare facility. Manipulations and treatments that are done to the patients also impact the ability of aerosolization, such as oxygenation modalities, endotracheal intubation, bronchoscopies or nebulizing medication treatments. All of these factors make the isolation precautions for diseases like COVID-19 more complex than typical droplet or airborne definitions.

**Universal Masking**

With the knowledge that respiratory illnesses have been the greatest international impact on recent outbreaks, it is time to again review the items included in standard and transmission-based precautions and potentially include some variation of universal masking for patient encounters. In particular, this may be most essential in frontline areas, such as emergency departments, urgent care centers, ambulances and first responders, where there is no known history for the patient and unknown exposure risks. Also, in areas where many aerosol-generating procedures are occurring, such as intensive care units, procedural areas, respiratory care units and dental clinics.

Another difficult lesson learned from the COVID-19 pandemic is the inadequate supply of respirator options that are available across the healthcare continuum for staff. Traditional N95 masks that require fit testing were in short supply as the pandemic ratcheted up. In even shorter supply were other types of respirators that did not require fit testing, such as PAPRs, CAPRs and other full-face respirator options.

And with almost all of these types of respirators, there are still contraindications for use, such as facial hair, eyeglasses, severe asthma, or other health conditions of the worker. This has revealed a long feared weak link in the ability of a facility to provide adequate protection to all its healthcare workers at the most crucial time it is needed. Efforts to increase not only the availability of current respirators, but also develop new technologies that offer the same level of protection, but have more universal fit and application to a wide variety of users, should be a push from manufacturers and vendors for healthcare and other essential workers.

More research is needed in the field of disease transmission, and in particular for respiratory illnesses. Many studies are based on animal models, which have limitations with human physiology, or are lab-based, which have limitations in real-world scenarios. Understanding how effective the airborne or aerosol spread is for various respiratory diseases would provide much needed information on how best to develop transmission-based precautions that are effective. A review of the current recommendations of airborne precautions would also elucidate which components are most effective in breaking the chain of disease spread.

And based on these types of data, precautions for specific viral illness could be more specific and also more customizable based on transmission factors. However, until that time comes, and with the continued threat of emerging viral respiratory pathogens, consideration of universal masking guidelines as part of standard precautions may be the beginning of another evolution of how we approach infection prevention practices in healthcare organizations.

**DATA HAS SHOWN THAT HCWS MADE UP ROUGHLY**

20% **OF CASES IN THE SARS OUTBREAK AND**

18% **IN THE MERS OUTBREAK**

**References available at [InfectionControlToday.com](http://InfectionControlToday.com)**

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Q&A: COVID Presents Unique Challenges to NICUs

Giving birth can be difficult in even the best of circumstances. But what happens if the infant needs to be taken to the neonatal intensive care unit (NICU)? And what happens if a mother or father tests positive for COVID-19? What if there are not enough isolation rooms? These are just some of the issues that have been confronted by NICUs across the country in the face of the COVID-19 pandemic. Jenny Hayes, MSN, RN, CIC, CAIP, CASSPT, is the infection prevention leader at the Hospital of the University of Pennsylvania. Hayes says that it all comes down to strategy. She recently sat down with Infection Control Today® to explain what she considers to be the best approaches to NICU care under the shadow of COVID-19. For instance: “All of our mothers are tested upon admission. They all come in whether they’re symptomatic or not symptomatic, they are all tested. Not all hospitals may have that capacity.”

ICT®: What are those challenges of infection prevention in NICUs in general? And has COVID-19 presented a unique challenge there?

Jenny Hayes, MSN, RN, CIC: In the neonatal intensive care population, you can’t look at this population as a single entity. This is a combined population of maternal health, both prior to birth and after birth. You have your triage for labor and delivery. You have your labor and delivery staff and that setting. And then you have the birth of a child who perhaps needs emergent resuscitation. Or is born prematurely and needs to go to the infant resuscitation bay and is subsequently admitted to the neonatal intensive care unit. Once that happens, you still have to have that consideration for the postpartum setting where the mother will be recovering from the delivery. So, remembering that delivery can take place as a vaginal birth in a labor and delivery room, or perhaps in an operating room as a C-section. Both of those settings have unique considerations for safety as far as COVID-19 is concerned.

ICT®: What are those?

Hayes: In labor and delivery, mom’s in labor. There may be heavy breathing involved. You may have more close contact with the face. Perhaps you’re holding the patient’s hand and assisting them in breathing. It can be a heavier breathing. Asking the patient to wear a mask, which is something that we do in our facility, can be challenging at that point, especially as labor progresses, and you’re to the point of pushing. That right there offers a set of unique challenges for both the patient and the staff in the room. And when you talk about aerosolization, sometimes you’re talking about if perhaps a mom screams during that delivery. She may aerosolized some particles that wouldn’t normally take place in a routine patient care setting. The patient in labor is going to have unique needs, as opposed to the patient who delivers by C-section. Now you’re looking at a perioperative setting. Now you have to consider the airflow exchange in an operating room. You want to make sure that you are meeting the correct guidelines for that.

ICT®: What about the fathers?

Hayes: We allow one partner in the room. One coach in the room with the parent. In the past, you could have more than one person, but with COVID-19 we now have one person to assist with that labor. And yes, they would be masked as well. Everyone in the room is universally masked.

ICT®: What are the healthcare workers wearing?

Hayes: They’re wearing a paper surgical mask and they are wearing a face shield to protect them in addition to the mask, because that offers eye protection as well. The point of the mask, as I’m sure as you hear in the media, helps prevent transmission at the source. OK? Your patient is protecting you by wearing the mask. You’re protecting the patient by wearing a mask. That face shield is going to help you protect your eyes.

ICT®: Do you test the babies after they’re born for COVID?

Hayes: We do if the mom tests positive. All of our mothers are tested upon admission. They all come in whether they’re symptomatic or not symptomatic, they are all tested. Not all hospitals may have that capacity. And in that case, they need to prioritize their testing and they may want to prioritize that based on symptomatology. We did that initially, we only tested symptomatic patients. But then we discovered with the increases in the COVID rates that there was a lot of asymptomatic cases that were not being identified in the community at large. One of the challenges with testing with just symptomatic patients was that some of the patients were refusing testing because they were afraid of being separated from their baby. When we went to universal testing, that became part of their pre-admission education when they’re being followed by their obstetrician. They would understand that universal testing was required for all patients admitted to labor and delivery, whether you had symptoms or did not have symp-
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toms. There was more education in the prenatal setting, so that they would understand what the signs and symptoms of COVID are. Part of that education through telemedicine or inpatient visits is universal testing protocols. So, it’s not a surprise when they come in that, yes, we’re going to test you for COVID-19. Fortunately, in our hospital, we’re able to get the results pretty quickly. If the mom tests positive, then yes, we will test the baby. When the patient delivers in labor and delivery, as I described some of the unique scenarios with that, as opposed to a C-section that’s a perioperative setting. Now that’s a little bit different. Your air exchanges need to be higher. In a normal patient room, you’re looking at a greater than 6 air exchanges per hour. In a perioperative setting, greater than 12. You really want to ensure that your air balancing is correct.

**ICT**: Who checks the air balance?
**Hayes**: That would be facilities. There’s air direction. They usually have a contractor who can do their air balancing reports for them. Usually done annually. But if there’s any concern that there’s a change in the airflow, then they can always have their contractors come in and check it again. There’s filtration that takes place and there’s directional airflow that takes place. You have to have the correct checks and balances. And you do this really normally in a perioperative setting, but then you have to consider, “Oh mom tested positive.” So now this OR is isolated as a COVID OR. We have our supplies isolated in that OR. Some things stay outside of the room. Some things are inside of the room, depending on your policy and your hospital, how you want to handle that based on a risk assessment. And that risk assessment will be performed with nursing staff and leadership, physicians, anesthesia. What is it that you have to have in the room absolute at hands reach? What is it that occasionally you may use, that may say in a cart outside of the room?

**ICT**: What concerns you the most about COVID-19 and the neonatal intensive care units?
**Hayes**: Open bay settings. A lot of intensive care units are designed with open bay settings, and limited isolation rooms. You may have seven or 10 beds in an open bay, and maybe only have one or two isolation rooms. But now what happens when you limit the number of isolation rooms you have? Perhaps you have two isolation rooms. Perhaps you have two babies whose mothers tested positive for COVID. So now they have to go into isolation. But now you have another mom who comes in and she’s a person under suspicion. There’s a test that’s pending. And she delivers promptly. So now you have a baby who maybe…. You have to strategize where you’re going to place that baby. Perhaps at the end of the bay, closer to the isolation rooms. Waiting for that test result to come back to see, because they’re under investigation for possible COVID. You really kind of have to strategize placement of patients and prioritize those risks.

**ICT**: What happened when you had more patients who tested positive for COVID-19 then you had isolation rooms? What did you do in that case?
**Hayes**: Well, that’s where you have to strategize. You have to really look and see what type of… Are there any aerosol-generating procedures? If the baby’s on CPAP or BiPAP, then that may be a greater concern because that’s an aerosol-generating procedure. You’d want to put that baby in the isolation room. A baby that comes to you from the infant resuscitation bay, and they’re already intubated, it’s more of a closed setting. The other thing is you may have an isolette warmer that is closed. That’s going to help prevent some of that aerosolization that will happen. Rather than an open bassinet, you put that baby in an isolette.

**ICT**: I guess in some cases the bonding between a newborn and mother wasn’t able to take place right away?
**Hayes**: That’s correct. We require two tests, 24 hours apart, to take mom out of isolation. The mom may deliver and may not be able to see the baby initially. During that time period, we’re trying to rule in or rule out COVID. And if [the mother has COVID-19 and the baby doesn’t] mom’s going to be going home, and then she’s going to have to follow the quarantine initiatives that are put out by the department of health before she’ll be able to come back and visit with the baby. Because the baby’s in the intensive care unit, their discharge is likely to be delayed due to their health issues. It becomes very challenging. And it’s heartbreaking for some of these families.
What Happens to HAIs When COVID-19 Takes Over?

BY JAN DYER

By last December, the rates of some hospital-acquired infections (HAIs) were on the way down. For instance, by 2016, central line-associated bloodstream infections (CLABSIs) had declined 10%, catheter-associated urinary tract infections (CAUTIs) 6%, hospital-onset meticillin-resistant *Staphylococcus aureus* 6%, hospital-onset *Clostridium difficile* infections, 7%.

But for the time being that’s pretty much all we’ll know. Because shortly after the 2019 results were posted, COVID-19 was beginning to suck all the oxygen out of the room as far as tabulating infections went. So much so that, in March, CMS “announced unprecedented relief” for the clinicians and providers participating in Medicare quality reporting programs: They would not have to report data on HAIs from January 1 through June 30, the first two quarters of 2020. Announcing the suspension, CMS administrator Seema Verma said CMS was “supporting clinicians fighting Coronavirus on the frontlines” and the administration was “cutting bureaucratic red tape so the healthcare delivery system can direct its time and resources toward caring for patients.”

**Impacts of Diversion**

Infection prevention resources have necessarily been diverted to outbreak management, but the impacts on traditional HAI surveillance and prevention efforts “remain concerning,” say clinicians from the Hospital Infection Prevention Program at Virginia Commonwealth University Health System in Richmond. They conducted an informal Twitter poll in April 2020, asking the infection prevention and hospital epidemiology community what percentage of their traditional infection prevention time had been diverted to COVID-19 response efforts. Of the 220 respondents, 79% said they were spending more than 75% of their time.

The potential impacts of the diversion, the authors suggest, are numerous. Surveillance efforts, process measure data collection, and mitigation efforts may be compromised. Moreover, shortages in traditional PPE resources have led the CDC to recommend, for instance, that hospitals with gown shortages stop using isolation gowns for endemic pathogens such as MRSA and vancomycin-resistant Enterococci. Antimicrobial stewardship programs may also divert their attention to COVID-19, meaning that an influx of critically ill patients could drive suboptimal antibiotic uses, putting patients at risk for antibiotic resistance and CDI.

Only 28 states have passed laws to provide the public with hospital infection “report cards,” and it’s only been about six years since CMS began penalizing hospitals that have poor records on hospital-acquired conditions. But those are factors in the downward trend for HAIs. The information at Hospital Compare, for example, which is Medicare’s database on quality of care at more than 4,000 Medicare-certified hospitals, “encourages hospitals to improve the quality of care they provide.”

The teeth in the “encouragement” are the reduced Medicare payments for hospitals that rank in the worst-performing quartile with respect to hospital-acquired conditions, including CAUTI, CLABSI, MRSA bacteremia, CDI, and surgical site infections. CMS’s temporary suspension of penalties, Stevens suggests, is an acknowledgment of the challenges facing the IP community and should be considered and copied by other quality programs.

Watchdog organizations that allow customers to compare hospitals by ratings have made infection control measures more transparent. The Leapfrog Group, a nonprofit organization that collects, analyzes, and disseminates data on quality and safety of the healthcare system, assigns bi-annual letter grades to general acute-care hospitals to bring patient safety “into the sunlight” and “prove transparency can save lives.” Leapfrog says its safety grade is the nation’s only rating focused entirely on patient safety, including infections. According to the 2019 Hospital Safety Grade, 33% of more than 2,600 hospitals earned an “A.”

HAIs are still a serious problem, of course: 1 in 31 hospital patients has at least one. And just because hospitals were given a reprieve from reporting for (so far) the first half of 2020 doesn’t mean someone isn’t paying attention. Healthcare providers, infection control experts, and hospital administrators are still noting...
patterns and doing studies.

Kathleen McMullen, the manager of infection prevention at Christian Hospital and Northwest Healthcare, St. Louis, and lead author on an article about HAs during the COVID-19 pandemic, writes that the greatest impact is expected to be on CLABSI rates. COVID-19 patients are at higher risk for many reasons, she notes, including increased use of femoral lines for central access (away from the mouth and respiratory tract). She and her co-authors, Barbara Smith and Teri Rebman, say two of their hospitals have seen dramatic jumps already: One hospital had a 420% increase; a second had a 327% increase. They also saw a jump in CAUTI for similar reasons: a 179% increase at one hospital, a 57% increase at the other.

Enhanced Cleaning
One beneficial aspect of COVID-19 is the enhanced environmental cleaning, which reduces organisms spread via contact, like C. difficile. McMullen et al. say C. difficile rates dropped 51% and 45% in the two hospitals. They add, however, that some PPE conservation practices may be concerning, such as reuse of isolation gowns and reduced focus on contact isolation precautions in lower-risk patients.

Although a low number of studies have been published so far, the rates of bacterial infection in COVID-19 patients are “considerable and probably underestimated,” says Patrizia Spigaglia, from the Istituto Superiore di Sanità, the leading technical-scientific body of the Italian National Health Service. In part, this is due to the complexity of bacterial infection diagnosis during the current health emergency. She also warns about a higher risk of C. difficile infections, because of the connection with antibiotics. She cites estimates that 72% of COVID-19 patients have been treated with broad-spectrum antibiotics, and about 75% of residents in long-term-care facilities (LTCFs, and hardest hit by COVID-19) receive at least one course of antibiotics during 6 or more months.

The mid-pandemic studies have the immediacy of ongoing research, because the patients who survive usually have only recently had COVID-19, or still have it. And the findings vary—not surprising since the studies are often observational, in individual hospitals, with small patient populations.

For instance, a single-center study in northern Italy found a high incidence of bloodstream infections in the study group of 78 critically ill patients with COVID-19.11 The cumulative risk of developing BSI was almost 25% after 15 days in the ICU, potentially surpassing 50% after 30 days. On the other hand, researchers who analyzed 88,201 blood cultures from 28,011 patients at New York-Presbyterian hospitals found the rate of bacteremia, which can lead to bloodstream infections, low among COVID-19 patients. In fact, bloodstream infections, the researchers said, are “very rare” in COVID-19 patients.

All the usual suspects of HAI are now compounded by this new one—COVID-19 itself. Zhou et al. conducted a meta-analysis of 40 studies and found the proportions of nosocomial COVID-19, SARS and MERS were relatively similar: 44%, 36% and 56%, respectively. Of the confirmed patients, the medical staff and other HAs accounted for 33% and 2% of COVID-19 cases, 37% and 24% of SARS cases, and 19% and 36% of MERS cases.

Despite the heavier workload of dealing with COVID-19, it’s more important than ever to provide data feedback by surveillance on Enterococcus, S. aureus, Klebsiella, Acinetobacter, Pseudomonas and Enterobacter spp, according to Dexter et al. Cleaning and other processes, these physicians write, significantly reduce the transmission of pathogenic bacteria and viruses—particularly important for a virus like SARS-CoV-2, which can survive for at least three days on a variety of materials, including stainless steel, cardboard and plastic.

IPS Need to Act
Two categories—patients with hospital-acquired COVID-19 infection and healthcare personnel with occupationally acquired COVID-19—are new metrics that require monitoring, say McMullen and her co-author. The definitions are not clear yet, they add, due to the mass of unknowns swirling around COVID-19, but determining the definitions should be a priority for the infection prevention field. Infection preventionists should take action now, they urge, to prevent some of these anticipated health outcomes. They should encourage continual focus on proven best practices for CLABSI and CAUTI prevention, and prioritize IP observation of invasive procedures.

As the pandemic seems not to abate, patients will start to present to the hospital after delaying crucial primary and preventive care visits, meaning sicker non-COVID-19 infected patients, with the potential for increased CLABSI and CAUTI rates.

Patients selected for the first non-emergent surgeries will also be at higher risk of infection, which may lead to higher rates of SSIs. In other words, despite this new threat, and despite the reprieve from data reporting, now is not the time to let surveillance and despite the reprieve from data reporting, now is not the time to let surveillance

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REFERENCES AVAILABLE AT INFECTIONCONTROLTODAY.COM

We Want to Hear From You!

How has your hospital been handling COVID-19? Have any IP success stories? Let us know!

Connect with us online at InfectionControlToday.com or find us on social media @ICT_Magazine
When the canister can’t be found or is too cumbersome to carry, Alcavis Bleach Wipes are ready to eliminate even the most resistant organisms,* including:

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*Depends on disinfectant strength
Environmental services (EVS) teams are known to play a significant role in the spread of human pathogens. This is not only true for bacteria, but also for enteric and respiratory viruses. Surface disinfection reduces the level of pathogens, thereby lowering the potential for their spread in both healthcare and public facilities. Unfortunately, recontamination of these surfaces can occur at any time after application of commonly used disinfectants. This is especially true in public facilities used by large numbers of people during daily activities. Continuously active sanitizers or disinfectants (CADs) are those that impart onto a surface the ability to kill microorganisms when they become contaminated. While not considered a substitute for regular cleaning and disinfecting practices, they provide an additional barrier to infection control.

The first continuously active disinfectants were developed more than 50 years ago and were largely designed for the control of odor producing bacteria in clothing. These were organo-silane based disinfectants which resulted in the binding of a quaternary ammonium compound to a surface. Quaternary ammonium compounds are among the most commonly used disinfectants. Metals, such as copper, silver, nickel, and zinc are also known to impart anti-microbial activity to surfaces. These substances are known to disrupt the proteins and nucleic acids of both bacteria and viruses.

Titanium oxide, commonly used in paints, is another substance that in the presence of UV light will produce free radicals which will act as a disinfectant.

An advantage of the organo-silane based products is that they can be used to treat surfaces in existing facilities and can be applied as a spray on coatings, paints or wipes and are effective both on fabrics and hard surfaces.

CADs can be incorporated into articles, such as tabletops, light switches, handrails, clothing etc. as in the case of copper and silver. They can also be applied by sprays, wipes, or paints. They may retain their antimicrobial activity anywhere from hours to the lifetime of the surface.

While CADs are designed to always be active against microorganisms the time (rate) at which this occurs varies. As with disinfectants, killing of the organisms

Q&A

Bridge Gap Between Infection Preventionists and EVS Teams

As a healthcare consultant, Charles P. Gerba, PhD, has seen how infection preventionists (IPs) and environmental services (EVS) teams interact at hospitals and other healthcare facilities around the world. Some interact well, but Gerba feels that, in general, the two sides have problems communicating. As he tells Infection Control Today®, they “really have different languages and priorities that need to be brought together.” Gerba, a professor of environmental microbiology at the University of Arizona, thinks it may be time for the creation of a position occupied by someone with skills that would allow that person to bring IPs and EVS together in a more functional way. There’s a lot at stake. “We’re always going to have another organism coming around the corner that we have to deal with that we didn’t deal with before. And so, it’s going to be a continual evolution of strategies. And I think we saw that with COVID-19.” The full interview can be seen at InfectionControlToday.com.

Infection Control Today®: What are the best approaches that you’ve seen in terms of infection preventionists and environmental services teams (EVS) working together?

Charles Gerba, PhD: Well, I think it’s really trying to understand the strategies and benefits for each of them. You know, I think environmental services, particularly today, is looking for better technology that they can use to reduce the risk of the transmission of microorganisms that cause disease in the healthcare environment. I think, really working together on different strategies in terms of what are the best products to use. What are the surfaces to treat. And communicating what risk reduction might result from different strategies.
is not instantaneous and a dwell time is required. CADs may take minutes to hours for a 99% reduction or more of the test microorganisms.

Currently, the United States Environmental Protection Agency (EPA) registered products that claim long-lasting effectiveness are limited to those that control odor-causing bacteria on hard, non-porous surfaces. The agency is currently reassessing changes that may allow such claims in response to the current coronavirus disease 2019 (COVID-19) pandemic. Unfortunately, standard procedures for testing and registration by regulatory agencies of CADs as disinfectants useful in preventing exposure to disease causing microorganism transmission has only taken place in recent years.

The EPA developed a protocol for evaluating bactericidal activity on non-porous copper containing surface alloys and one-for-one for claiming a residual self-sanitizing activity of dried chemicals on hard, non-porous surfaces.

These methods also simulate contact and touching by incorporating “wear” of the test surface as well as re-inoculation of the test microorganism. However, more progress is needed in this area to develop standard procedures that would also allow a better reflection of the advantages in terms of benefits in reducing the risk of infection with treated surfaces.

Quantitative microbial risk assessment is an approach that has been used to demonstrate reduced risk of infection from a continuous acting hand sanitizer.

**ICT**: What healthcare institution have you seen that really stands out in terms of how EVS and infection prevention departments can work better together?

**Gerba**: There’s a lot of technology being developed. And what I’ve seen, particularly with the environmental services departments, is that they’re approached by a lot of new technologies. And they really need to develop good programs with developing and understanding the potential benefits of these products and actually getting together and doing pilot-scale work. A lot of our work has been with the two groups getting them together to understand how we can evaluate new technology and development. Try to assess whether it’s an actual and real benefit to them. And that’s what we’re really searching for. I think both are focused, but they need to communicate because that’s where there’s opportunity to evaluate new products that are being developed. Particularly for that healthcare environment they may be looking at all the time.

**ICT**: Do you think infection preventionists should actually run environmental services teams?

**Gerba**: I think there’s a reason for better communication. What I see, particularly, both of them have different perspectives, but understanding. Being able to communicate when and how they can see development of a product and its impact. Being able to develop some kind of language between them to understand that. I think what I’ve seen a lot is environmental services tend to do things… I mean everything today is return on investment. So, it has to be couched in that way between both of the groups knowing that there is going to be additional costs. But there has to be an understanding of what’s going to be the benefits of that in terms of risk to the patient and the cost of maintaining those surfaces or certain services in the future. I think that’s really what we need to see. From what we’ve seen in our own work, there’s a lot of technology out there that can reduce the risk of transmission in healthcare environments. But it’s getting both parties to understand that and communicate the benefits... Both from a standpoint of cost and benefit to the patient because I think those are really key issues today.

**ICT**: In general, do infection prevention and control departments, and environmental services departments work together well?

**Gerba**: I think it depends on the individual healthcare facility. Sometimes I’ve seen it work really well together. Some of the healthcare facilities we work with have environmental health specialists or infection control specialists particularly dedicated to that full-time. And I think that works out quite well from what I’ve seen, because they have the time and the effort to look at new technology, evaluate technology and make assessments to communicate that to the infectious control communities in healthcare facilities. I really think that in the future, what you really need is a specialist in infection control who understands both the environmental health services and also the professional staff that deals with the patients. I think that’s really critical to communicate that. Because in some ways, there’s a little bit of differences in languages and focus. I think...
over time. Using this approach, it was demonstrated that four hours after hand application, the sanitizer reduced the probability of infection if the hand was re-contaminated with norovirus by 78%.

Recent epidemiological studies have suggested that CADs can reduce the bacterial bioburden on surfaces in healthcare environments and hospital-acquired infections (HAIs). Assessment of a quaternary ammonium polymer coating in intensive care units was found to result in the absence of antibiotic resistant bacteria on surfaces for three months in one study and in a follow-up study a 36% decline in HAIs was observed. Several studies with copper surfaces have also shown similar results and suggested a reduction in HAIs.

The potential for CADs has taken on new importance with the COVID-19 pandemic. Protecting exposure via surfaces in facilities used by large numbers of individuals becomes challenging. This is especially true in schools, universities, mass transport, recreational facilities, etc. The amount of resources and practicality of disinfecting facilities between use by different individuals appears insurmountable in many cases. Recent studies have shown that CADs can be effective against SARS-CoV-2 both on hard surfaces and fabrics, and may be useful in filling this need.

Q&A continued

really in the future, and particularly in large facilities, there needs to be a specialist in that area to serve in some way in between both groups because there’s different languages and different focuses from what we’ve seen. In healthcare facilities that I’ve worked with, it’s best if I have one person there who really understands the benefits of certain actions in infection control. And then it communicates. They understand, I think the ones I work with, both the professional healthcare staff and environmental services, so they’re able to serve as a go-between. And I think that’s really a need in the future. Somebody that can communicate with both groups, because they have different focuses. And really have different languages and priorities that need to be brought together. I really see that as a need, particularly at large healthcare facilities. They have to have somebody with that kind of focus, that can communicate between both groups. Because in my career, I’ve worked with both groups and found it easiest to work with somebody that’s just working only on infection control and they have the suitable background and communicate with both groups. And then a lot can be done. A lot of progress can be made, and I think much more effective evaluation of different strategies. That’s one of the things I found a lot of times is lack of focus oftentimes between the healthcare professional staffs and environmental services. And they’re all confused sometimes. Who’s the decision maker in that? Who’s the best person to communicate? And that’s why I think in a large facility that’s so important: one specialist in that area, who can communicate both internally and externally, with people bringing maybe new strategies to the healthcare environment. Do that to reduce the risk of infection transmission in healthcare environments.

ICT®: Anything else you’d like to add about how EVS and infection preventionists can work better together?

Gerba: What I would say to them is it’s an increasing challenge for them, and it will be an increasing challenge. That’s what I found in working with environmental services. There’s always a new need like COVID-19. Suddenly, personal protective equipment—it becomes a real challenge to provide that. And not only that, but clean it. How do we recirculate it when there’s a shortage? I think you have to look to the future. What I would say is plan. In the future, what happens if there’s a shortage of personal protective equipment? Or we have to turn around the equipment really fast and ensure that we adequately provided the needed infection control. I think it’s going to take a lot more future thinking by environmental services on how to deal with these things in the future. And they really should develop a strategy for the next crisis we deal with; the next emerging infection. I think environmental services are going to be really challenged in providing the resources they need to the professional staff in healthcare.

Charles P. Gerba, PhD, is a professor of environmental microbiology in the Department of Environmental Science, and Environmental and Community Health at the University of Arizona. He serves on the Advisory Boards of PDI and Allied Bioscience.

REFERENCES AVAILABLE AT INFECTIONCONTROLTODAY.COM

THIS INTERVIEW HAS BEEN EDITED FOR CLARITY AND LENGTH.

Watch the full interview online at infectioncontroltoday.com/view/q-and-a-bridge-gap-between-infection-preventionists-and-evs-teams
Thinking of teleworking? Not in a million years would we have guessed, but yes, it is happening. Infection preventionists (IPs) are boots on the ground and people think we’re everywhere, but this morning as I write this, I am at home, in my office, getting ready to start my day. How will the units survive? How will I survive?

I begin my day just as if I were in my “hospital” office. I have my coffee and fire up my computer. Will start to look at emails and then dive right into surveillance and reporting, only stopping for the occasional Skype meeting or call from the hospital. I know my teammates (all incredibly bright master’s prepared nurses) at the hospital will take care of rounding and putting out fires, and when I return next week and someone else works from home the roles will be reversed. While some may have questioned our ability to telework, the reassurance of support provided comfort. We also had to deal with the very real possibility if one member went into quarantine, we could lose the entire team.

I can tell you; we have all admitted it takes a little getting used to. It’s a different routine yet we remain intensely focused even when we are not there, I know (as do my staff) that I am protecting and serving our valuable customers. I was asked last week “what made it difficult to get used to” and I think it’s the sense of releasing some control. I know when I am there I can respond quickly and can be there to help if things get out of control. There’s also a sense of comfort for myself and my staff knowing we have each other’s backs.

No Manual

Infection prevention is a hands-on, eyes-on-the-hospital job. The idea of working from home may fill you, the hard-working IP, with anxiety. I know I have an incredibly strong team and becoming anxious about something I cannot control remotely is wasted energy.

What will they do when they know you can’t appear around any corner? How can you provide just-in-time advice? The coronavirus disease 2019 (COVID-19) pandemic has upended so much about our lives and ways of conducting business, everything is vulnerable to change. Though potentially an afterthought to the busy IP, the IP’s health and well-being is critical during this marathon pandemic. Furthermore, a telework-ready IP is an IP that continues to support their facility if they also end up in quarantine. Teleworking like so many other aspects of nursing are something we just needed to jump into. No training, no guidebook, no manual. We take our daily routine and model it into practice from our homes and offices. Like so many other things in life, attitude is everything. As nurses we must be flexible and fluid in our practice. Our primary mission is to save lives and to adjust to what may get in our way.

At the beginning of the pandemic we were all working “inside” the hospital. As information and guidelines became available, we quickly realized we would not be able to sustain social distancing within our current space.

And did we all need to physically enter the hospital every day? Especially when we were asking other departments to minimize the staff (and therefore exposures) in the hospital? Being outside felt kind of odd at first, but again we must focus on our mission to protect our patients and staff. It can’t be about us, really a no-brainer.

Technology today connects us not only to each other, but to the hospital intranet and, with it, the patient’s electronic health record. It enables us to still maintain important meetings electronically from the comfort of our desk or home (when thinking about the meetings we are not
attending in person—there are many). We start the day with the morning IP huddle to discuss calendars, important meetings or rounds that might need to be covered. Other meetings include hospital incident command, construction updates, meetings with environmental services, surgical processing, and facilities. Meetings are led by who would have led them in person, making do from their home office.

When preparing for the pandemic, nursing leadership and top officials discussed how we can keep our doors open and provide the highest level of care safely. Since standing up a COVID-19 ward and locking down the hospital (restricting visitors and cancelling all non-urgent surgical cases), we meet to discuss “reopening.” This term is a bit misleading, more of a calculated and planned phasing to develop a “new normal.”

The level of collaboration or questions presented depends on the party asking and on the meeting. Some may just need updates on CDC guidelines, others need advice on proper containment for a construction project, and environmental services may ask if a specific chemical can be used as a substitute for something harder to obtain. Routine business is conducted, like the storing of surgical trays and purchasing storage solutions.

Even at the hospital, most meetings are telemeetings. Face-to-face meetings are not recommended unless absolutely necessary.

Payroll and administrative functions can be completed remotely, electronic training modules are the norm, and policies can be updated from home—perhaps with fewer distractions. The IP’s teleworking would update policies to decrease the workload of the staff at the hospital. Hospital staff are rounding and putting out the daily fires that crop up even more with the coming of COVID-19. Surveillance and reporting of hospital-acquired infections (HAI’s) has long held the IP captive to their computer, and thus is easily accomplished at a home work station. If in-house, the split would be about 50/50. Teleworking is 100%; so you need to get used to that.

Providing Guidiance
The ideal balance may be to have a portion of the IP staff working within the brick and mortar facility, responsible for face-to-face interactions, environment of care rounds, assessment of construction sites, perform daily rounds, assess compliance with infection control policies (hand hygiene, precautions), and provide hands-on staff education. The physically present IP can answer questions, offer reassurance, and provide comfort in a way that a remote presence cannot. As much as people say they “dread” seeing the IP, they rely on us as experts to provide guidance on critical decisions related to COVID as well as other infectious diseases. Talking with staff in person (while maintaining social distancing) helps staff know they are supported and heard.

“Technology today connects us not only to each other, but to the hospital intranet and, with it, the patient’s electronic health record. It enables us to still maintain important meetings electronically from the comfort of our desk or home (when thinking about the meetings we are not attending in person—there are many).”

—Jody Feigel, RN, MSN

Our current process is to rotate staff weekly to telework. Each Friday we review who will be working from home the following week and what is included in their responsibilities. To date it is working.

Our world has changed significantly, and the IP is not immune to a new paradigm. In our facility a hybrid model of telework and face-to-face infection prevention is the best balance between allowing social distancing and safety while maintaining the same high standards we expect from the tireless, essential IP. Our colleagues rely on our expertise and we cannot let them down.

JODY FEIGEL, RN, MSN, is the Nurse Manager of Infection Prevention at VA Pittsburgh Healthcare System in Pittsburgh.

REFERENCES AVAILABLE AT INFECTIONCONTROLTODAY.COM

Resources for Infection Preventionists

- Infectious Diseases Society of America: Telemedicine Consults and Payments: The How-To’s [www.idsociety.org/clinical-practice/patient-care/telehealth/]
- Johns Hopkins University: About Telehealth [www.hopkinsmedicine.org/telemedicine/about.html]
Device Disinfects Medical and Personal Protective Equipment

Ultraviolet light can disinfect anything from mobile nurse computers stations to wheelchairs in a device called the UV-C Enclosure (UVE), manufactured by UV-Concepts. The company says that the UVE uses fluorescent tubes that emit light with a strong peak at a 254 nanometer wavelength, which is known to deactivate viruses and bacteria at high power levels.

Jeremy Starkweather, the president and co-founder of UV-Concepts, said in a press release that the UVE “completely surrounds an item with high intensity germicidal UV-C light resulting in the fastest and most powerful UV-C disinfection solution available to healthcare providers. We’re very pleased to make the UVE available for healthcare institutions globally to help protect patients, healthcare workers, and visitors from harmful bacteria and viruses.”

Starkweather adds that the “concern for the cleaning and disinfection of high-touch surfaces in the healthcare environment has grown exponentially due to COVID-19.”

The device doesn’t require any prep work. An RFID badge is used to unlock the door to the UVE for authorized users and any sort of medical device can simply be wheeled in or hung, such as masks, inside the box. Once closed, the device turns on its bulbs and runs its disinfection cycle for 60 seconds.

John P. Ostdiek, the director of transportation at Aramark Saint Joseph Hospital of SCL Health in Denver, said in the press release that “this is the right piece of equipment at the right time to help healthcare personnel have one more tool to stop the spread of infectious diseases in a hospital setting.”

[Image of UV-C Enclosure (UVE)]

https://www.uvconcepts.com

Test Results Show Wipes Effective Against SARS-CoV-2

Super Sani-Cloth wipes, made by PDI, is effective against SARS-CoV-2, the virus that causes COVID-19. The company has generated data to this effect that it plans to submit to the US Environmental Protection Agency (EPA), according to a company press release.

The PDI data say that the wipes demonstrated a 3-log reduction against the virus. The tests on the wipes were done in compliance with the EPA’s guidance “Disinfectants for Use on Environmental Surfaces, Guidance for Efficacy Testing” and were found to meet the threshold for deeming a disinfectant effective.

Sean Gallimore, the senior vice president and general manager for PDI Healthcare, said in the press release that “this was an important step in furthering our mission to protect patients and those on the frontlines of preventing the transmission of COVID-19. We are seeking SARS-CoV-2 EPA label claim approval for Super Sani-Cloth wipes to officially verify that the virus is being inactivated on surfaces, and ultimately protecting caregivers, patients and communities.”

After reviewing the data, James Clayton, the director of laboratory sciences for PDI, said that “the ability to reduce surface transmission of the virus is an important tool in the growing arsenal of preventative measures.”

Super Sani-Cloth wipes is one of several of PDI’s hospital-grade disinfecting products being tested for efficacy against SARS-CoV-2 for submission to the EPA for approval. Testing of the additional disinfecting products is still underway and results are expected in the upcoming months, the company says.

[Image of Super Sani-Cloth wipes]

https://pdihc.com

Test Kit Provides Swabs That Detect Moisture

The HydroCheck™ is a test kit that can detect as little as 0.05 μL of residual moisture, providing immediate results. The test kit is manufactured by Healthmark Industries Company, which has been making devices to help in the delivery of surgical and other medical devices to patients since 1969.

In a press release, Healthmark says it will be adding HydroCheck™ to its Proformance™ Cleaning Verification line. “Swabs are available in the following sizes: 1.7mm, 2.8mm, 3.8mm, and 5.0mm. If a detectable amount of residual moisture is present on the swab, there will be a visual color change to purple on the swab,” the company says in the press release.

[Image of HydroCheck™ swabs]

https://www.hmark.com
75,000 deaths occur annually in US hospitals due to HAIs

(It’s time to take proven infection prevention further)

Figures released from the CDC make stark reading for Infection Preventionists. An estimated 722,000 healthcare-associated infections occur annually, resulting in 75,000 deaths and billions in additional costs. More than half of these occurred outside of the intensive care unit.

To change these numbers, hospitals are adopting Hibiclens® for housewide daily patient bathing as an easy, valuable, infection prevention strategy. Hibiclens is helping to reduce facility-wide HAI risks, such as CLABSIs, CDI, and MRSA.

For more information on how daily bathing with Hibiclens can help you in your infection prevention strategy visit www.hibiclens.com.


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¹. Clostridioides difficile spores formerly known as Clostridium difficile spores.
². Refer to device manufacturer’s instructions for use.
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